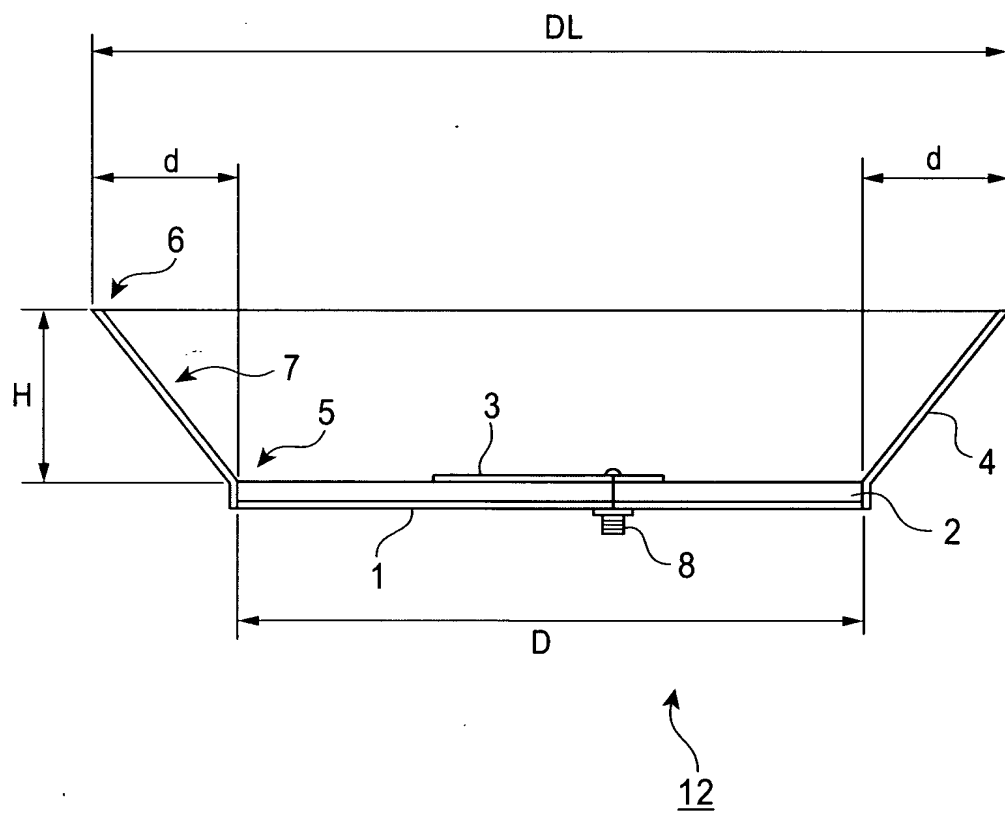
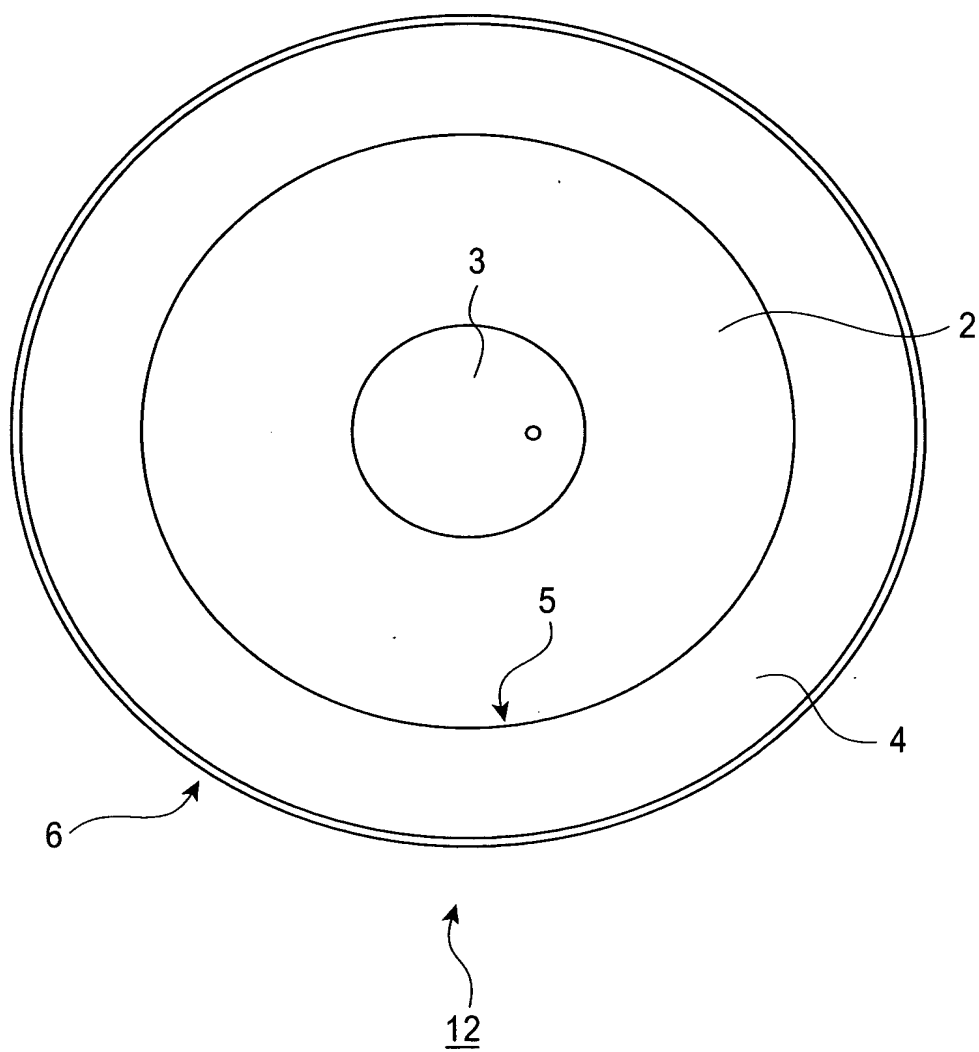


FIG. 1



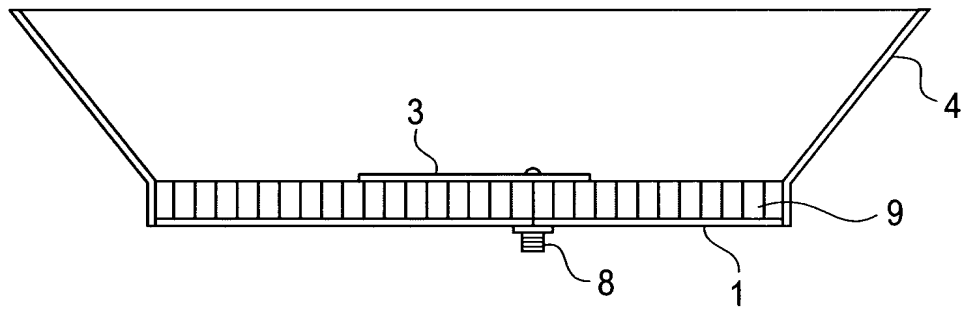
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FIG. 2



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FIG. 3



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FIG. 4

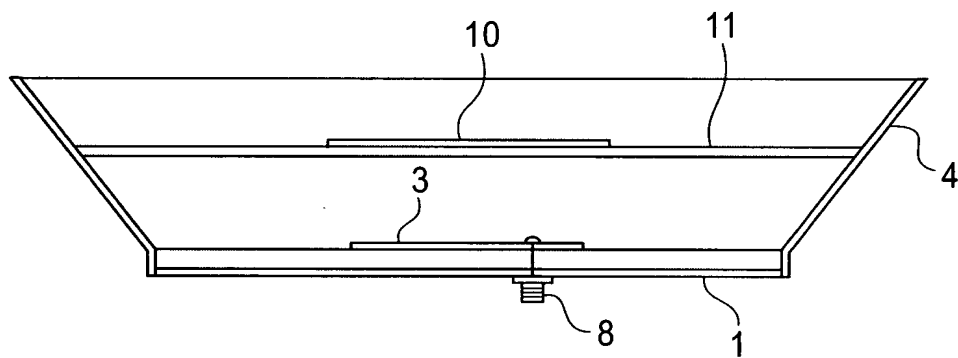


FIG. 5

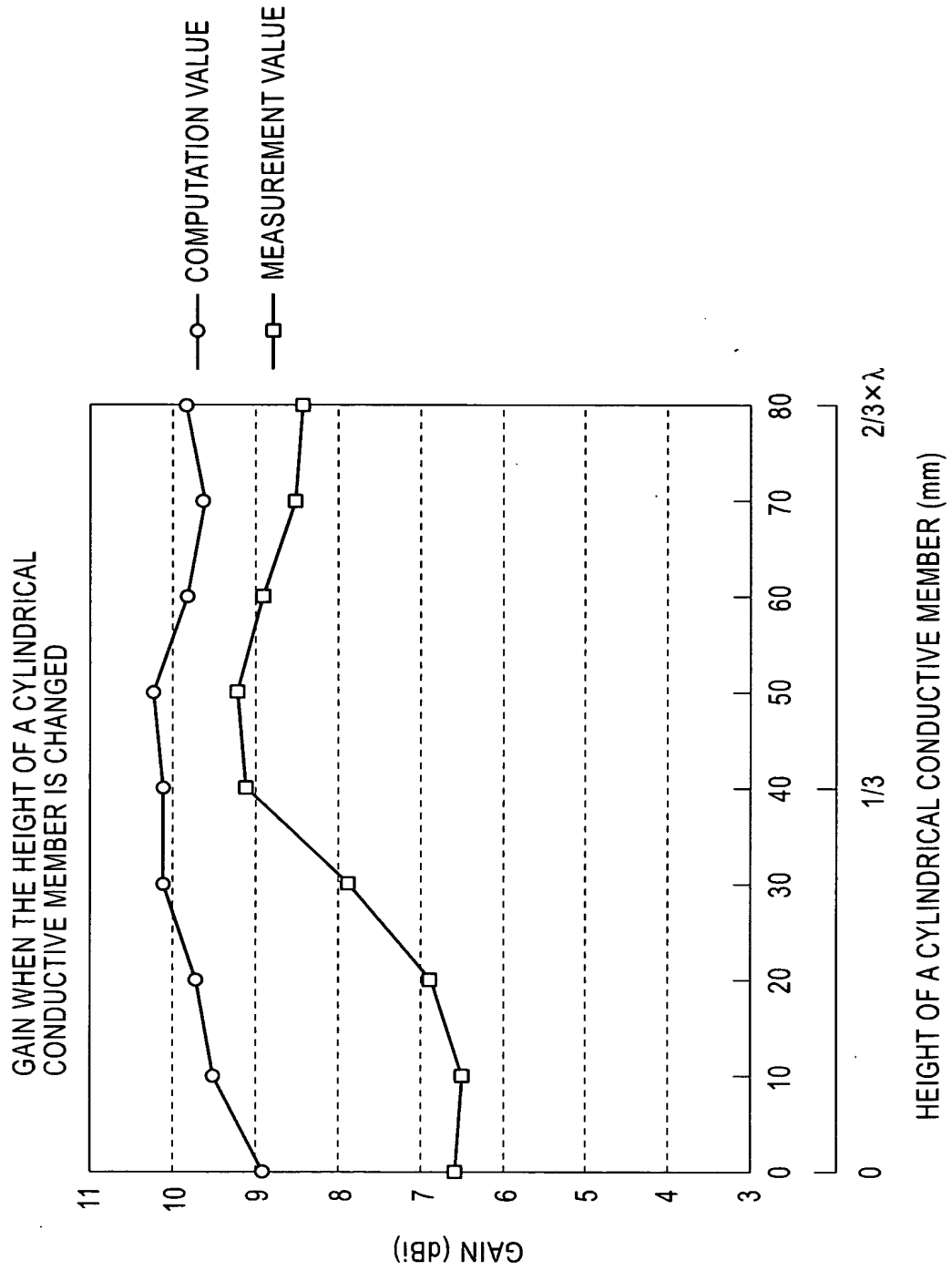


FIG. 6

GAIN (dBi) WHEN THE DIAMETER (D) OF A SUBSTRATE AND THE SPREAD
DIAMETER (d) OF A CONDUCTIVE MEMBER ARE CHANGED

D(mm)	d(mm)	0	5	10	15	20	25	30	35	40	45	50
80mm		7.7	8.6	9.0	9.8	10.1	10.7	11.1	11.4	11.7	11.8	11.7
90mm		8.5	9.2	9.4	10.1	10.5	11.2	11.5	11.7	12.0	12.1	11.7
100mm		9.2	9.5	10.0	10.5	11.2	11.4	11.9	12.2	12.2	12.1	11.9
110mm		9.7	10.2	10.5	11.1	11.7	12.1	12.3	12.5	12.2	12.1	11.7
120mm		10.3	10.9	11.3	11.9	12.2	12.4	12.7	12.2	11.9	11.4	11.2
130mm		10.9	11.5	11.8	12.3	12.4	12.2	11.7	11.3	10.9	10.7	10.6
140mm		11.6	12.1	12.2	11.8	11.0	10.6	10.0	10.1	10.2	10.1	9.8
150mm		10.9	10.5	9.4	8.9	9.2	9.4	9.4	9.8	9.4	9.2	9.1

(HEIGHT (H) OF A CONDUCTIVE MEMBER FIXED AT 1/3 A WAVELENGTH)

FIG. 7

BEAM WIDTH (DEGREE) WHEN THE DIAMETER (D) OF A SUBSTRATE AND THE SPREAD DIAMETER (d) OF A CONDUCTIVE MEMBER ARE CHANGED

D(mm)	d(mm)	0	5	10	15	20	25	30	35	40	45	50
80mm	H PLANE	75	73	66	67	65	63	58	56	54	53	52
	E PLANE	73	65	48	60	57	53	51	48	46	43	44
90mm	H PLANE	69	69	73	65	63	57	55	54	53	50	51
	E PLANE	68	62	64	58	54	51	49	47	43	40	40
100mm	H PLANE	65	68	64	62	57	57	54	51	51	48	46
	E PLANE	62	61	59	55	51	49	44	42	39	38	38
110mm	H PLANE	64	62	61	58	56	52	51	48	46	44	43
	E PLANE	58	57	54	51	45	42	40	37	37	35	38
120mm	H PLANE	61	59	57	53	52	50	46	45	45	45	41
	E PLANE	54	53	47	44	43	37	35	34	34	37	43
130mm	H PLANE	58	56	54	52	48	45	45	45	41	43	40
	E PLANE	48	47	44	40	35	33	32	34	39	53	58
140mm	H PLANE	51	49	48	47	46	42	46	43	42	42	42
	E PLANE	42	39	36	33	33	35	44	52	67	72	88
150mm	H PLANE	49	46	46	46	43	44	43	42	43	43	45
	E PLANE	36	30	30	40	49	97	103	82	97	97	97

(HEIGHT (H) OF A CONDUCTIVE MEMBER FIXED AT 1/3 A WAVELENGTH)

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FIG. 8

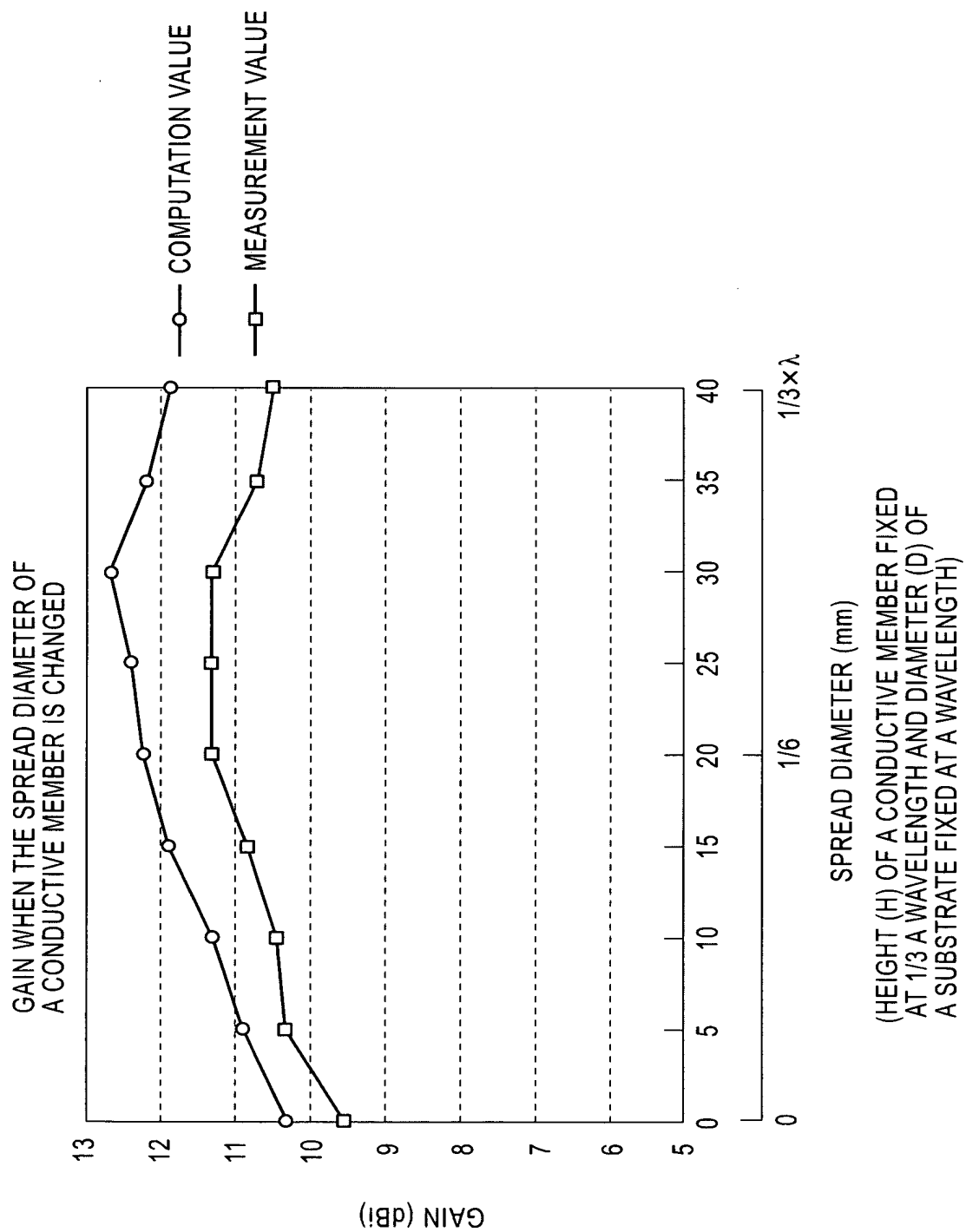


FIG. 9

